DOCUMENT RESUME

ED 369 675 SO 023 338

TITLE	Environment. Development. How Can Societies Develop To Meet Basic Needs and Nurture Economies without Undermining the Natural Resources and Environmental Integrity on Which They Depend? Teaching Global Issues.
INSTITUTION	Victoria International Development Education Association (British Columbia).
PUB DATE	87
NOTE	10p.
AVAILABLE FROM	Teachergram, Victoria International Development Education Association, 407-620 View Street, Victoria, British Columbia V8W IJ6, Canada ($1 Canadian).
PUB TYPE	Guides - Classroom Use - Teaching Guides (For Teacher) (052) -- Collected Works - Serials (022)
JOURNAL CIT	Teachergram; v2 n1 Fall 1987
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Developed Nations; *Developing Nations; Economic Development; Foreign Countries; High Schools; Land Use; Learning Activities; *Natural Resources; *Physical Environment; Social Studies
IDENTIFIERS	Canada; *Environmental Impact; *Environmental Problems; Sustainable Development

ABSTRACT

Designed for the senior secondary level, these activities and articles explore critical issues between the environment and development. Two causes of environmental degradation are wasteful affluence and desperate poverty. The problems with development and the environment addresses Canadian and global situations. An article presents three assumptions often made in development: (1) misleading accounting conventions; (2) biased allocation; and (3) inappropriate aid. Additional articles further discusses what can be done, what assumptions need to change, and how to change some assumptions. Two activities illustrate clearly the difference between sustainable and unsustainable development and encourage students to affect positively local government and participate in the introduction of sustainable development worldwide. A list of 60 environmental organizations, contacts, and resources provide further information on development and the environment. (CK)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 369 675

Environment: Development:

How Can Societies Develop to Meet Basic Needs and Nurture Economies Without Undermining the Natural Resources and Environmental Integrity on Which They Depend?

Teaching Global Issues Teachergram, Volume 2 Number 1 Fall 1987

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
SILVIA VILCHES
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

SO 023 338

teaching global issues

Teachergram

Vol.2.No.1 Fall 1987

Environment: Development:

How can societies develop to meet basic needs and nurture economies without undermining the natural resources and environmental integrity on which they depend?

The problem...

" The combined destructive impacts of a poor majority struggling to stay alive, and an affluent minority consuming most of the world's resources are undermining the very means by which all people can survive and flourish."
Robert Prescott-Allen, World Conservation Strategy Report, 1980, IUCN, WWF, UNEP

" The current process of economic development has not only failed to meet the basic objectives of economic development itself - eradication of poverty, creation of mass employment and provision of basic needs - but it has also slowly and steadily destroyed the global environment and mortgaged the future of the world."
Anil Agarwal, Director, Centre for Science and Environment, New Delhi, 1983

" The extent of the extreme poverty that gives rise to so much ecological damage and human suffering is influenced by international monetary, trade and aid policies; the struggle to preserve global environmental quality is unavoidably intertwined with the struggle to improve the lot of the global underclass."
Erik P Eckholm, Down to Earth, 1982, Institute for Environment and Development

" A world in which poverty is endemic will always be prone to ecological and other catastrophes."
World Commission on Environment and Development, 1987

" Poverty pollutes, and only by attacking the root causes of poverty can the spectre of environmental degradation be held off."
United Nations Environment Program

" Few threats to global peace and the survival of the human community are greater than those posed by the prospects of a cumulative and irreversible degradation of the biosphere on which all life depends."
The Report of the Independent Commission on International Development Issues, Chairman: Willy Brandt (1980)

Environmental degradation today is worldwide, serious, and worsening. Governmental and international studies widely document its two main causes: 1: wasteful affluence, and 2: desperate poverty.

The extremes of affluence and poverty, the environmental degradation, and consequently, much of today's international tension and insecurity, all arise from inappropriate assumptions underlying conventional definitions of economic growth and development.

These assumptions are obscure and seldom brought to mind. Yet they influence almost everything we do, affecting decisions in all areas of domestic and international economies, with wide-ranging impacts on peoples and environments all over the world.

This article examines these assumptions and their effects. It shows how they promote growth in economic disparity, progressively destabilize social and environmental structures, and threaten global ecological integrity and international security. Removing these threats, by implementing socially and biologically sustainable forms of development, will necessitate rooting out and changing these assumptions, and a wide range of activities presently based on them. The Report of the **Bruntland**

(cont'd. p.2)

Source: Croall and Rankin 1981 Ecology for Beginners

(. . .from p.1)

World Commission on Environment and Development (WCED 1987) concluded:

"The time has come to break out of past patterns. Attempts to maintain social and ecological stability through old approaches to development and environmental protection will increase instability...We are unanimous in our conviction that the security, well-being and very survival of the planet depend on such changes, now.

— — — — — — — — —

The primary cause of global environmental deterioration is now widely recognized by national and international, governmental and non-governmental organizations as the traditional economic development that has produced what the United Nations' Environment Program (UNEP) terms **"the two great polluters, wealth and poverty".**

1. Wealth pollutes:

High levels of affluence pollute biological systems faster than they can recover, through excessive and wasteful rates of exploration, extraction, transportation, processing, manufacture, use and disposal of resources.

2. Poverty pollutes:

Relentless poverty forces growing numbers of economically disenfranchised people to subsist directly on increasingly marginalized environments until ecosystems collapse. When this happens, subsistence becomes impossible and poverty deepens, in a vicious cycle which necessitates migration, widens the environmental impact and leads to rural wastelands and burgeoning slums of unemployed squatters surrounding urban developments.

Global insecurity follows:

The two results combine to form what the Brandt Commission termed in 1980 one of the greatest "threats to global peace and the survival of the human community" (Box p.1.) As the Canadian International Development Agency (CIDA 1986) explains:

"In various parts of the world, ecological degradation is becoming a causal factor in economic, political and social unrest. Environmental deterioration leads to greater poverty. As poverty grows, frustration, resentment and civil strife mount. Examples can be found in the growing number of ecological refugees and guerilla movements...With the projected increase in Third World population and the resulting pressure on resources, political tensions and conflicts will rise unless economic development becomes sustainable. The effects are likely to be felt in every sphere of political relations, with unsettling impacts on global stability."

More recently, the Brundtland World Commission stated in April 1987:

"Many parts of the planet are caught in a vicious downward spiral: poor people are forced to overuse environmental resources to survive from day to day, and their impoverishment of their environment further impoverishes them, making their survival ever more difficult and uncertain. The prosperity attained in some parts of the world is often precarious, as it has been secured through farming, forestry, and industrial practices that bring profit and progress only over the short term."

When analysed, these deep-rooted problems reveal counterproductive, misleading and ultimately lethal assumptions that characterize unsustainable forms of conventional development. In doing so, they illustrate the nature of the sustainable alternatives with which they must be replaced.

What's gone wrong with development?

Despite obvious advances, "development" today, viewed worldwide, provides mainly for the short-term economic aggrandizement of a politically privileged minority and incurs, without accounting for, the imminently ruinous costs of global social and ecological destabilization. The Canadian International Development Agency (CIDA) told the Bruntland World Commission on Environment and Development (WCED) in May 1986:

"The fact that about 25% of the world's population consume 75% of the world's wealth gives weight to claims that the North has an insatiable appetite that cannot be satisfied if Third world countries are to be given a chance for sustained development. Never in world history has there been so much waste together with so much destruction of the environment."

As well as ruining the environment, this process contributes to the need for a global expenditure of over one trillion US dollars annually to the military defence of the consequently rapidly dwindling resources. Ironically, this expenditure itself consumes enormous quantities of resources, exacerbating environmental problems and, consequently, the international insecurity it was designed to protect against.

Brundtland World Commission (1987):

"The arms race - in all parts of the world - preempts resources that might be used more productively to diminish the security threats created by environmental conflict and the resentments that are fuelled by widespread poverty."

Environment Canada (1984):

"We in Environment Canada would echo the statement made by Lester Brown (founder of the Worldwatch Institute) In his book 'Building a Sustainable Society (1980):

"Since World War II, 'national security' has acquired an overwhelmingly military character...Yet the threats to security may now arise less from the relationship of nation to nation and more from the relationship of humanity to nature...The erosion of soils, the deterioration of the earth's basic biological systems, and the depletion of oil reserves now threaten the security of countries everywhere." "

Environmental problems - how bad?

A partial list:

■ **Species extinction:**

Environment Canada 1984:

"Extinctions are now occurring at a conservatively estimated rate of 10,000 per year. This alarming process could lead to massive ecological disruptions and perhaps even suspension of certain evolutionary processes."

World Resources Institute 1986:

"At current rates of tropical forest loss, a million species, 10 to 20% of the earth's total, could become extinct by about the year 2000."

This is perhaps the greatest environmental threat: the stability of the entire living world depends on the diversity of its genetic base.

■ **Agricultural soil loss:**

Edward Goldsmith, publisher, *Ecologist* Magazine 1985:

"Even the United Nations Environment Program admitted at its 1977 Conference on Desertification that at least a third of the world's remaining agricultural land was, at current trends, being turned into a desert."

The World Commission on Environment and Development 1985:

"Modern technology, combined with chemicals and driven by often counter-productive economic incentives, is placing more and more agriculture on an unsustainable path."

Standing Committee on Agriculture, Fisheries and Forestry to the Senate of Canada 1984:

"Canada risks permanently losing a large portion of its agricultural capability if a major committment to conserving the soil is not made immediately by all levels of government and by all Canadians."

■ **Chemicals dispersal:**

Environment Canada 1984:

"Over 1000 new chemical compounds are registered for commercial use in North America each year, with incomplete understanding of the risks to human and environmental health."

National Wildlife Magazine 1986:

"200 contaminants have been found in US groundwater supplies. So far EPA has set standards for only 22 of them."

South magazine 1986 (also WCED 1987):

"About 350,000 people in the Third World are poisoned by pesticides each year - 10,000 die."

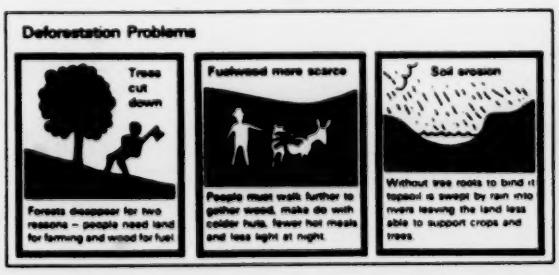
The World Resources Institute explains (1986):

"In 1979 nearly one third of the pesticides exported by the U.S. were not registered for use at home, and of these, 20% had been cancelled or suspended by the government as unsafe to human health or the environment."

■ **Climatic deterioration:**

Ecologist Magazine 1985:

"At the 1977 conference at Reykjavic, four of the world's leading climatologists [named] declared that, if we continued burning fossil fuels and cutting down forests at the present rate, a global climatic catastrophe was inevitable, a view which is now shared by most serious climatologists."


Deforestation Problems
Trees cut down
Forests disappear for two reasons – people need land for farming and wood for fuel
Fuelwood more scarce
People must walk further to gather wood, make do with colder huts, fewer hot meals and less light at night
Soil erosion
Without tree roots to bind it topsoil is swept by rain into rivers leaving the land less able to support crops and trees

Possible solutions
Graphic New Internationalist Third World Calendar 1986 by permission
Community forestry
Foresters must start helping people plant trees around their homes, farms and villages – and take notice of their views
Tree cropping
Wood can be harvested without trees being killed. But proper management means serving the fuel needs of the poorest as well as protecting trees
Improved cooking stoves
Better cooking stoves use less wood and reduce the health hazards from the smoke of an open fire. But they are often too expensive
Better living standards
The only real solution to the fuelwood crisis is better standards of living. If people were better off they could afford other fuels and end their desperate search for wood

■ **Deforestation:**
Bruntland WCED 1985:
"Forests in developing countries have declined by one-half during the century, and are shrinking at an increasing rate..."
Earthlife Foundation:
"At this rate (one hundred acres of tropical rainforest every minute) the forests - the oldest and richest expressions of life on the planet - will all be gone within 40 years...Each represents a rich - and usually unexplored - treasure house of substances that might benefit mankind enormously. As the trees come down, undiscovered cures for cancer and unknown crops are disappearing forever."
World Resources Institute 1986:
"Taken as a whole, the rate of deforestation in the tropics exceeds the rate of reforestation by ten to twentyfold."
"Eight percent of West German forests were reported dead or damaged in 1982. One year later the figure was 34%. By 1984 the figure stood at 50%."
"An estimated 400 million tons of dung are burned annually where fuelwood is scarce. The sacrifice of this fertiliser is estimated to depress grain harvests by over 14 million tons, an amount greater than annual food aid to all developing countries."
Gaia Atlas of Planet Management 1984:
"...the cattle rancher...sets light to at least 2.5 million hectares of forest in Central America and Amazonia each year, mainly to raise beef for lucrative export markets in the developed world."
"Each year, 12 million hectares of forest (an area almost the size of England) are being eliminated from the face of the earth."
■ **Water cycle disruption:**
National Wildlife Magazine 1986:
"In the (U.S.A.) southwest, groundwater withdrawals exceed natural recharge by 21 billion gallons per day. As water tables drop, farmers drill deeper at higher expense to irrigate crops. The U.S. Dept. of Agriculture says groundwater depletion will seriously affect the ability of farmers to produce crops on some 15 million acres in 11 states by the end of the century."
World Resources Institute 1986:
"In India, 70% of all surface waters are polluted...80% of childhood deaths are due to waterborne disease....Many disease vectors flourish in the standing water of irrigation systems created to aid food production...Water shortage and contamination cause 25,000 human deaths daily...Water shortages, a major cause of suffering and death, are often caused by disrupting hydrological cycles by deforestation, loss of soil cover, over-use of groundwater or excessive erosion."

How does conventional economic development cause this?

In an overall worldwide view, our anthropocentric view of the biosphere allows humans to treat its complex web of interconnected species and habitats essentially as a "grab-bag" of "resources". In the interest of "efficiency", these resources are exploited in unsustainable ways, with profit-maximising imperatives that minimise and discount environmental costs. A systematically manipulated international market system, reinforced by military activity - actual or threatened, overt or covert - then allocates the "resources" primarily to the rich, often in the form of luxuries, and secondarily - or sometimes not at all - to the poor as necessities.

This degrades the environment in two ways: 1) By an *extensive* overconsumption and pollution of environmental resources in the production and use of often trivial, rather than essential goods, to drive industrialized economies for the benefit of an affluent minority; 2) By forcing a growing, impoverished majority out of the world economy entirely, and into direct dependence on fragile environments, whose ecosystems soon break down under the consequent, inevitable, *intensive* overuse. The whole process stems from decisions based on usually unexamined, but nevertheless wrong and dangerous, assumptions.

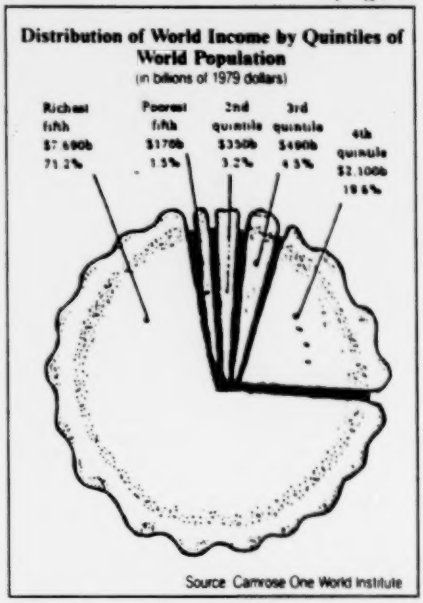
Conventional development's mistaken assumptions:

1. Misleading accounting conventions:

Traditional development has assumed that short-term, often privately-realized economic gain is paramount; it takes precedence over long- and even medium-term environmental contributions to the biosphere's overall ability to support life. These latter contributions have therefore been "externalized" and discounted by misleading accounting practices, as UNEP states:
"In traditional accounting terms, a nation will be recording high growth rates - i.e. becoming 'wealthy' - if it liquidates its resources: sells all its minerals, denudes all its forests or exploits its fish and animal life to extinction".
This misleading accounting also includes the assumption that Gross National Product is an indicator of net national welfare, and efforts to increase GNP growth have ignored the negative nature of many of the supposedly positive contributions to it. As the World Resources Institute (1986) explains:
"GNP tells us little about...rapid depletion of groundwater, fisheries, forests, soils and other natural resources (that) reduce a nation's potential future income. The current economic gain from the water used, the fish caught, the wood sold, and the crops grown, is treated as a positive contribution to GNP, but the depletion of the value of the natural resource asset is not subtracted. Using current GNP figures as indicators of long-term economic opportunities, therefore, can be very misleading."
Even forest fires, car accidents and arson, obvious examples of net detractions from national and global welfare, produce, through the dollar value of compensatory operations, what are assumed to be net positive contributions to GNP.

2. Biased allocation:

The international market: Today's world shows that we have then assumed it is appropriate to allocate these misleadingly-acounted-for resources to those who can most easily pay for them rather than those who most need them. Thus, allocation is primarily to the rich, often in the form of luxuries and trivia, and only secondarily, if at all, to the poor, in the form of necessities. For instance, as F.E. Trainer, in his book 'Abandon Affluence' explains:
"The poor Ugandan mother who must risk her child's life every mealtime because she cannot afford fuel to sterilise water (a situation that probably takes more than ten million lives every year) needs petroleum more urgently than the Sunday drivers in developed countries; but they each obtain about 16 barrels a year while she gets none because they have the effective demand and can outbid her in the international oil market."
The sunday drivers get more than a fair share as a result of assumptions implicit in today's politically manipulable international economic system. World trade, aid and lending patterns have been and are systematically preferential to industrialized countries. They are, in themselves, responsible for much of the growing income gap that presently destabilizes global ecology and security. The system's biased assumptions can and must change before development assumes sustainable forms worldwide, as CIDA (1986) affirms:
"International cooperation is essential in devising a global economic system which responds to the development needs of Third World countries. Not only must we find more effective tools to treat the symptoms of environmental mismanagement, we must also address its root causes: poverty and population growth, crippling debt, unfair terms of trade and dwindling or stationary aid budgets."
As detailed in the two previous *Teachergrams*, most unmanageable population growth is concomitant with and a demonstrable result of poverty, which is in turn a result of unfair terms of trade, crippling debt and dwindling, stationary, or inappropriately targeted aid budgets.



3. Inappropriate aid:

Attempts to remedy problems through aid have been flawed by inappropriate choices of aid targets, based on wrong assumptions about who most needs what kind of development: middle-income countries instead of the poorest; urban rather than rural areas; rural males rather than the females who, in Africa for instance, produce most locally-grown food: Big dams not only forced relocation of the poor from reservoirs, but increased disease vector habitat, contributed to salinization of soils through massive irrigation, and/or provided electricity only affordable by the rich; roads and infrastructure, built for urban areas, did nothing to help the rural poor; and much aid, tied to the purchase of donor country technologies, was inappropriate to the basic need of the landless for a place to grow food and for fuel to cook it with.
Cash crops: Aid-related "conditionalities" imposed by international monetary institutions like the World Bank and the International Monetary Fund forced many countries into cash cropping for export, thereby forcing many peasants off productive land and onto land barely capable of supporting them, which they inevitably overused. These and multinational corporate cash crop programs have replaced local food self-sufficiency for the poor with affluence for others and with imported foods that the poor cannot afford; in efforts to improve national economies, the poorest have often become worse off. The WCED

(Cont'd p.4)

(from p 3)

report (1987) states:

"The heaviest burden in international economic adjustment has been carried by the world's poorest people."

And: **"The cultivation of cash crops on unsuitable rangelands has forced herders and their cattle onto marginal lands. The unfavourable international terms of trade for primary products and the policies of aid donors have reinforced pressures to encourage increasing cash crop production at any cost."**

"Developed" countries:

Not only has much development been inappropriate to the needs of poor countries, it has been inappropriate to the needs of rich ones as well. Thus, for instance, in addition to problems of industrial and urban pollution, large scale, chemically-dependent farms operate with costly, non-renewable fossil fuel inputs for huge labour-displacing machinery to produce genetically identical and thus biologically precarious hybrid species; the seeds for these are provided by the same corporations which sell the chemical fertilisers, pesticides and herbicides required to force them, year after year, to grow in biologically unreplenished soil of declining fertility - which consequently erodes or blows away. In the United States - which has already lost one third of its topsoil - the average annual rate of soil loss is ten to twelve tonnes per acre. Many hedgerows and ditches which could house natural pest predators and discourage erosion are gone. Exchanging chemical and energy inputs for fertility and labour, we have reaped unemployment, massive losses of soil, and generations of pests that are increasingly resistant to pesticides.

In Kenya, farms of under four hectares average nine times more labour input per hectare than do farms of forty hectares or more, and, partly because of this, they also produce six times more per hectare.

What can be done?

Examples of inappropriate development are worldwide. Environmental degradation, poverty and economic injustice all come from inappropriate economic assumptions. Appropriate forms of socially and environmentally sustainable development can be introduced by changing our basic views of the economics that produces the problems. This appears hard, but seems easier on recognizing the arbitrary nature of much of our existing economic system.

Source: gdi information

Economics is a fabrication of assumptions.

The key to making changes in an economic system is the realisation that much "economics" is really little more than a fabrication of assumptions designed for some predetermined, often political, purpose. Behind the relationships between competing options and prices in a market is a complex web of subsidies, taxes, incentives, disincentives, tariffs, concessions, duties and agreements.

For example, in Canada, many oil-heated houses remain uninsulated because burning unnecessarily large amounts of oil seems cheaper. It is made to seem cheaper, despite diminishing fossil reserves and the environmental cost of getting at them, by political decisions: 1) the fast write-offs, depletion and exploration allowances enjoyed by oil companies in Canada that paid income taxes on gross revenues of $20 billion in the period 1947-72 at an average rate of only 3.5%, compared to the average corporate rate of 46%, and 2) the removal of the Canadian Homeowners Insulation Program grant. This shows not that oil is ultimately cheaper than insulation, but that energy supply is subsidized more heavily, because its lobby is more powerful than the energy demand management lobby. This is so because the sale of oil permits much larger contributions to electoral campaigns than does the design and implementation of energy-saving technology - which would in fact produce more energy and labour per dollar spent and reduce the environmental impact of getting and using more new energy, while reducing the energy demand that renewable sources will ultimately be called on to supply. In this way, governments decide - ostensibly democratically and in the public interest - in favour of short-term private rewards that are outweighed by long-term public costs.

For similar reasons, nuclear power, fraught with potentially devastating, unresolved safety and waste disposal problems, but benefiting from billions of dollars of subsidised research and development, has appeared technically feasible and economically competitive, while properly insulated passive solar buildings, without such subsidies, have seemed like expensive and "exotic" technology - although one such building, for example, the Wallasey school in Great Britain, at the same latitude as Prince George, BC., has operated without fuelled heat except for lighting since 1964.

Changing the assumptions - political problems:

The above examples illustrate an underlying political nature common to many economically-related environmental problems and solutions. In this case, although subsidized growth in conventional energy-supply stimulation is potentially environmentally damaging, it promotes long-term corporate cash flow; this increases the likelihood of political campaign contributions from the corporate sector, in return for expectations of future similar policy. Meanwhile, the management of energy demand - i.e. efficiency improvement, recycling, insulation, etc. - reduces environmental impact, prepares for the inevitable transition to renewables, stimulates individual security through increased economic freedom, creates warm houses and more jobs and energy per dollar invested, but does little for campaign contributions and so remains without incentive. Many assumptions underlying conventional economic development follow a similar characteristic, i.e. they subordinate overriding long-term social and environmental imperatives to short-term private gain. Domestically, this is to be expected, because governments seeking election need money now, for only a four-year period, and so tend to favour potential campaign contributors in policy decisions which cause environmental damage that - with luck - may not become acute for a decade.

However, the environmental damage has already become acute, and this assumption of short-term political expedience is one of the key assumptions needing change. Domestically and internationally, it motivates a wide range of inappropriate environmental decisions. Changing it and other inappropriate assumptions will require meaningful political input from informed people through processes that may not yet be capable of weighing adequately the views of the poor with those of the rich and powerful: The Brundtland World Commission notes that:

"All nations will have a role to play in changing trends, and in righting an international economic system that increases rather than decreases inequality, that increases rather than decreases the numbers of poor and hungry".

and, further:

"We are aware that such a reorientation on a continuing basis is simply beyond the reach of present decision-making structures and institutional arrangements, both national and international."

For these reasons, decision-making structures are needed which are capable of reflecting the economic, social and environmental concerns of the poor, hungry and powerless, with equal consideration to that afforded to those powerful interests that have precipitated the present untenable situation. These structures will need to reflect true changes in the self-defeating assumptions behind today's economic and political systems.

What assumptions need to change, and how?

1. **Anthropocentrism; to interconnectedness:** humans are not at the centre of importance in a biospheric "grab-bag" of resources. The centre of importance of the biosphere exists everywhere as the complex linkages and interactions between species and habitats that, through their own diversity, sustain all life. For humans to shift from a central role in plundering these very linkages, to seeing themselves interconnected in the whole, will require as great a transformation of perspective as that prompted by the Copernican realisation that the earth is not the focal point of the solar system. Such a change, when underway, will bring numerous other faulty assumptions into line, and is the single greatest avenue for constructive change. It will require massive public education programs to support policies which reflect this realization.

2. **Wasteful affluence; to prudent means:** the pollution by the rich will be eliminated only by moderation of consumption habits to levels within the capacity of biological systems to sustain them. We can no longer assume ourselves to be the beneficiaries of everlasting economic growth. As Lester Brown of Worldwatch observes:

"Economic activity could be approaching a level where further growth in gross world product costs more than it is worth."

3. **Oppression of the poor, to inclusion of the poor:** The environmental overuse by the poor will be eliminated only by allowing the poor to maintain access to productive land and to benefit from the world economy in ways compatible with their cultural heritage. The ominous assumption that the 'haves' may discount indefinitely the needs of, and therefore subjugate, the have-nots' is a major cause of present problems.

4. Biased trade, to fair trade: Moderating consumption patterns in industrialised countries and improving the lot of poor ones will require replacement of many of the existing unfair assumptions built into international market structures.

5. Shortsightedness, to circumspection: Economies must recognise that environmental aspects of development must be integral to planning, not relegated to subsequent attempts at mitigation when forseeable damage has been done. (For instance, the *worldwide* loss of agricultural land should have a bearing on the decision to flood Peace River farmland to build the Site C dam to add to B.C.'s already oversupplied electricity grid.)

6. Prodigality, to living within means: Economies must be based on use of natural resource income (biomass, solar radiation, small scale hydro) instead of using up capital stocks which will eventually run out (and very soon if all people consume at Canadian rates).

7. The "dump", to the "depot": Economies must adopt cyclical instead of linear processes - materials recycling instead of "garbage" disposal; treatment of sewage for use as fertiliser to return nutrients to the soil, instead of multimillion-gallon-per-day effluent drains into aquatic systems.

8. Self-deception, to real bookkeeping: Economies must account for, and thus conserve, instead of "externalising", and thus discounting, the world's most precious resources - regenerative forests and soils, clean air and integrated water cycles. "Life-cycle" costing, including environmental costs of use and disposal/recycling of goods must be included in their purchase prices.

9. "Dominion" to peaceful coexistence: Economies must reckon with the conflict between boundaries of national sovereignty and of natural biome regions, and permit naturally evolved patterns of migration between habitats instead of local environmental overuse due to rigid national regulation.

10. More and more, to more elegant: The management of energy demand must take precedence over the stimulation of new supplies so that the inevitable transition to renewable sources will not be faced with impossibly high and wasteful demands.

11. "To him that hath...", to "to who most needs..." Already developed economies must permit the use of materials for production of essential goods and services that will better the lot of the global underclass, in order to reduce their overdependence on fragile environments. This may mean reducing domestic demand for luxury goods.

12. "Turning a blind eye", to conscious consideration: To assist the poorest of the poor in other countries, Canada should trade only with countries having good human rights records and showing equitable distribution of incomes and land, and betterment of conditions for the poor.

13. "Selfish aid", to development for the neediest: "Tied" aid, that benefits donor countries through contracts for domestic goods and services, must be replaced by development assistance that will promote local self-sufficiency and sustainable means of living for the poorest.

14. Conditionalities, to human development: Loan programs, financed by, and designed to provide cash flow for middle income earners and international lending institutions through exports from luxury cash crops, export textiles etc. must be replaced by development that directly betters the lot of the poorest.

15. Centralized decisions, to public participation: Those most adversely affected by remote head office or government decisions must have a legitimate influence on the outcome of development decisions affecting them locally, to reduce alienation, social tension and disparate allocation of mounting environmental costs (eg. French nuclear testing in the Pacific ocean).

In general, rich, overconsuming countries will need to change from production of wasteful non-necessities, in order to reduce pollution and to permit production of necessities for poor countries. Poor countries will need to distribute income equitably to reduce direct environmental pressure from the poor. Development will need to focus less on urban centres, giant projects and middle-income countries, and more on the rural poor and landless. Agriculture will need to rely less on chemicals and more on restoring nutrients to the soil. Equitable terms of trade must be established worldwide to reduce poverty and the concomitant population increases, all of which exacerbate environmental destruction.

Environment Canada (1986):

"The working through of the implications of this transformation...will profoundly alter societal values and institutions whose foundations are rooted in the understandings of the dying industrial age."

The Bruntland Commission indicated that sweeping changes are needed in the way people govern themselves, do business, grow food, generate power, build industries, produce weapons and have children. **"We are unanimous in our conviction that the security, well-being and very survival of the planet depend on such changes, now."**

Many of the changes to be made are political. The world has not yet made structural responses to the plight of the poor. A democratic process must involve the views of the poor and powerless as well as those of the rich and powerful. Failure to do so will increase existing global ecological and security threats. Success will ensure a transition to forms of economic development that all people and the biosphere can live with. Our first obligation is to become informed, and then to take part in helping the world to find its new direction.

Terry Chantler

(Terry Chantler is a coordinator of school programming for VIDEA.)

Bibliography:

Agarwal, Anil 1983 "The Poverty of Nature" *IDRC Reports* Vol. 12 No. 3 Ottawa: International Development Research Centre

Canadian International Development Agency 1986 *Environment and Development: a CIDA Perspective* Ottawa: CIDA

Canadian International Development Agency/Michel Tetrault 1986 *Environment - a Development Priority* Ottawa: CIDA Public Affairs Branch

Conference on Conservation and Development June 1986 *Implementing the World Conservation Strategy: Selected Papers and Abstracts* Ottawa: UNEP, IUCN, WWF et al

Eckholm, Erik P. 1982 *Down to Earth* New York: International Institute for Environment and Development/ W.W. Norton & Co.

Energy, Mines and Resources Canada 1977 *Financing Energy Self Reliance* Ottawa: Ministry of Supply and Services

Environment Canada 1984 *Sustainable Development - A Submission to the Royal Commission on the Economic Union and Development Prospects for Canada* Ottawa: Environment Canada

Environment Canada/D.F.W. Pollard & M.R. McKechnie 1986 *World Conservation Strategy - Canada* Ottawa: Ministry of Supply and Services Canada

Goldsmith, Edward 1985 "Open Letter to Mr. Clausen, President of the World Bank" Editorial *Ecologist Magazine* Vol. 15 No. 1/2 Buddmin, Cornwall, U.K.: Ecosystems Ltd.

Stennhart, Peter et al *National Wildlife* Magazine Feb./March 1985 "Soil: The Miracle We Take For Granted" Wash. D.C.: National Wildlife Federation

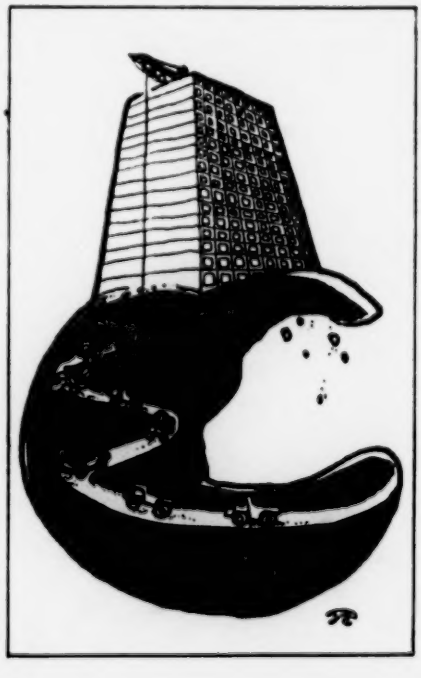
Trainer, F.E. 1985 *Abandon Affluence* London, U.K.: Third World Books

United Nations Environment Program Undated *Conserving the Future* Nairobi, Kenya: UNEP Information Service

World Commission on Environment and Development: Chair: Bruntland, Gro Harlem 1987 *Our Common Future* New York: Oxford U.

World Commission on Environment and Development: Chair: Bruntland 1985 *Mandate for Change* Switzerland: WCED

World Resources Institute and the International Institute for Environment and Development 1986 *World Resources 1986* New York: Basic Books



Activities:

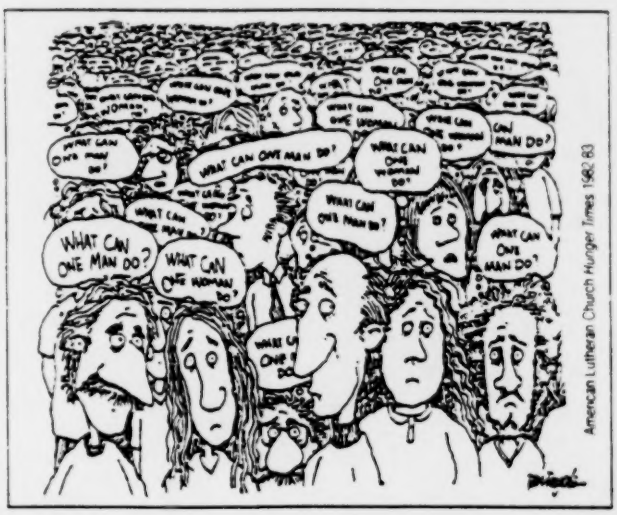
1. To illustrate clearly the difference between "sustainable" and "unsustainable" development.
Method: class discussion:
Label one side of a blackboard **"sustainable development"**, and the other **"unsustainable development"**. Below is a list of phrases that typify each kind of development. Ask the class to brainstorm their own phrases, with reference, where possible, to local or other examples of each kind, using the list to prompt ideas where gaps arise. Do students agree with all the listed suggestions? Which ones do they agree/disagree with and why? Try to pursue the discussion as far into the future as possible, using present results (positive and negative) of past trends to illustrate examples.

Exampie phrases:

A) Sustainable:
1) can be carried on indefinitely;
2) does not permanently harm environment;
3) makes use of renewable materials;
4) relies on naturally replaced flows of energy "income" (e.g. small scale hydro, wind, solar), not depletable stocks of energy "capital" (e.g. fossil fuels - oil and gas; uranium);
5) operates in cyclical, not linear fashion; i.e. products and by-products are recycled
6) does not contribute to "garbage", "pollution", "hazardous wastes" or other disposal problems;
7) does not depend on depletable materials;
8) values natural life support systems - clean air, clean water, soil fertility, genetic diversity and stability of species;
9) does not disperse chemicals into the environment;
10) does not displace ethnic peoples from cultural heritage;
11) does not incur rural costs to provide urban benefits;
12) does not contribute to increased urbanization;
13) employs people in interesting, healthy ways for long periods;
14) promotes distribution of income to poor people;
15) encourages cooperative, community activities;
16) encourages local ownership and responsibility;
17) allows affected local people to make important decisions;
18) promotes understanding of human relationship to other organisms and to the biosphere.

B) Unsustainable:
1) cannot be carried on indefinitely;
2) may permanently or widely harm environment;
3) depends on non-renewable materials;
4) relies on stored energy "capital", not renewable energy "income";
5) operates in "linear", not "cyclical processes; i.e. produces non-recyclable products;
6) creates "garbage", "pollution", "hazardous waste" or other disposal problems;
7) injures natural life support systems;
8) may disperse chemicals into environment;
9) may displace ethnic peoples from cultural heritage;
10) incurs rural costs to provide urban benefits; contributes to urbanization;
11) creates short-term, repetitive, uninteresting or physically harmful employment;
12) discourages local ownership or participation in important decision-making;
13) alienates people from natural surroundings;
14) contributes to already widening rich-poor income gap and social tension;
15) eliminates permanently other sustainable options (e.g. large-scale hydro eliminates agriculture, forestry, salmon fisheries).

2. To encourage students to feel capable of using their knowledge to affect positively their local environment, and to participate in the introduction of sustainable development worldwide.
Preamble: Often the overwhelming nature of world problems discourages individuals from believing that their own efforts can make a difference - tropical deforestation seems a distant concern. However, it is only by individuals becoming better informed about the outcome of their own activities, taking appropriate responsibility, and helping others to do the same, that presently unsustainable policies worldwide will be slowed, stopped, and eventually reversed.
For example, eating less beef in Canada will reduce the need for deforested tropical cattle-grazing rangeland that now: a) displaces (often eliminates) native peoples with rich knowledge of local species and ecologies; b) removes the habitat of migrating songbirds that used to brighten North American lives; and c) threatens climatic disorder. Democratic government policies are intended to reflect



the majority of individual attitudes. Each of us can make a contribution to a better-informed majority, can make appropriate changes in our own lives, and can provide encouragement to others to do the same.
Method: Class discussion to advise students of actions they can take to become better informed, to inform others, and to benefit their environment directly.

a) Personal action:

Conserving resources: (Canadians use more energy per person than any other country in the world). Ask the class to think of ways in which they could use fewer resources in their lives than they now do. Suggestions to get things started:

1) Buy only products you really need, and make the best use of them, for as long as possible.
2) Recycle the family's glass, cans and newspaper.
3) If there is no local recycling depot, create one! Begin by saving recyclable materials anyway, and encourage others to do the same. Find someone to donate a storage space in a garage. Write to other recycling organizations in other towns and/or get an environmental group (see Resources section) to help you prepare a presentation to city council on the need for a proper depot.
4) Use public transport, carpools, walk, or ride a bike wherever you can.
5) Turn off energy-using applicances when not in use.
6) Ask for paper, instead of plastic bags at supermarkets, and recycle them.
7) Try to eat lower on the food chain.
8) Find hobbies that don't depend on large amounts of energy.

Buy things intelligently: Do not support companies that waste resources, ruin environments locally or elsewhere, or exploit poor nations for cheap labour with poor working conditions or lax environmental laws. Boycott luxury foods imported from countries that do not grow enough food to feed their own people. Don't buy junk food that uses up resources that could be used to produce nutritious food. Don't buy unneccesary energy-using gadgets.

Promote sustainable development locally: Get involved! Research, discuss and evaluate local businesses to see which use sustainable practices and which do not. For any that do not, write a letter from the class to its directors pointing out your concern and asking for improvement. If none is forthcoming, write to your local MLA or MP asking for their help. Locate and help promote organic food producers in your area.

b) To become better informed:

Ask the class if they or any of their parents susbscribes to magazines about the environment. Perhaps they would donate them afterward to a special section in the school library. Is there interest in forming an environmental club? Is there a local environmental group that could be contacted to give a school presentation on local or other issues of interest? Make sure the school library buys a copy of "Our Common Future", the report of the Brundtland World Commission on Environment and Development, available in bookstores. Visit your local development education centre, if there is one, to use their resource centre, which is full of materials on these issues - or write, if you cannot visit.

c) Informing others:

When you recognize a local environmental problem that you would like to take action on, write letters to the local newspaper and explain your view. Send letters to MP.s and MLA.s as well. Start a single page, xeroxed school bulletin of point-form information with copied or original cartoons or illustrations of local or global development/environmental issues, and circulate it to other classes and maybe even to other schools.

d) Prompting political action:

Write letters to your elected representatives (local, Provincial, Federal) to ask their positions on environmental issues; inform them of your position and your reasons for it.

Senegalese poet Baba Dioum:

**"In the end, we will conserve only what we love.
We will love only what we understand.
We will understand only what we are taught."**

Economic problems and widespread poverty are now recognized as conditions which force people to misuse their natural resources. Peasants are held responsible for environmental destruction as if they had a choice of resources to depend on for their livelihood. But when their reality is basic survival, today's needs tend to overshadow consideration of the environmental future. It is poverty that is responsible for the destruction of natural resources, not the poor.
Canadian International Development Agency 1986.

Source: Chalk and Parker, 1981 *Ecology for Beginners*

Environmental Organizations and Contacts:

(Reprinted by permission of *Common Ground* Box 34090 Stn. D Vancouver BC V6J 4M1 733-2215)

Anti-Uranium Coalition 612-620 View St. Victoria, V8W 1J6 384-2445
Arrowsmith Ecological Assn. Box 179 Errington, V0R 1V0 248-2950 / 248-3752
B.C. Environmental Networking Box 224 New Denver, V0G 1S0 358-2449
B.C. Watershed Protection Alliance Box 9 Slocan Park, V0G 2E0 226-7770 / 226-7376
B.C.M.A. Environmental Committee 1807 West 10th Ave., Vanc. V6J 2A9 736-5551
Canadian Environmental Network Box 1289, Stn. B Ottawa, Ont. K1S 5B6 (613) 563-2078
Canadian Society for the Protection of Heritage Forests 2871 W 5th Ave. Vanc.
Catalyst Education Society Box 99, Lillooet, V0K 1V0 mobile tel: H42-4955JW
Earthlife #210-1650 Duranleau St. Granville Island Vanc. V6H 3S4 662-3228
Fed. of Mountain Clubs of B.C 1200 Hornby St. Vanc. V6Z 2E2 687-3333
Fed. of Naturalists 1200 Hornby St. Vanc. V6R 2E2 687-3333
Fraser River Coalition 8840 Moore Rd. Richmond, V6Y 2J1 277-1444

Greenpeace Foundation 2623 W. 4th Ave. V6K 1P8 736-0321
Haida Nation Skidegate V0T 1S0 559-4468
Health Action Network Society #11-3856 Sunset St. Burnaby V5G 1T3 435-0512

KHUTZEYMATEEN: **Friends of the Ecological Reserves** Box 1721 Stn. E, Victoria, V8W 2Y1 478-0388
Kitsumkalum Band Council Box 544 Terrance V8G 4B5 635-9574
Lynn Canyon Ecology Ctr. 3663 Park Rd. North Vanc. 987-5922
MEARES ISLAND **Friends of Clayoquot Sound,** Box 489, Tofino, V0R 2Z0, 725-4425 / 725-4258, **Nuu-Chah-Nulth Tribal Council,** Box 1383, Port Alberni V9Y 1P8
Northwest Wildlife Preservation Society, P.O.Box 34129, Stn. D., Vancouver V6J 4N3 736-8750 or 8746.
Outdoor Rec. Council of B.C. 1200 Hornby St. Vanc. V6Z 2G1 687-3333
Public Interest Research Group (PIRG) S.F.U. Burnaby, V5A 1S6 291-4360
Sea Shepherd Society P.O. Box 48445, Vancover V7X 1A2. 688-7325
Seven Sisters Society Box 73, Kitwanga, V0J 2A0 849-5649

Sierra Club of Western Canada 314-620 View St. Victoria V8W 1J4 386-5255, Vanc. 531-7478, **The Sierra Club** 423 Hasting Ave. Penticton, V2A 2V7
Society Promoting Environmental Conservation (S.P.E.C.) 2150 Maple St. V6J 3T3 736-7732
SOUTH MORESBY: **Council of the Haida Nation,** Box 589, Masset, V0T 1M0, **National Committee to Save South Moresby,** c/o Canadian Nature Federation, 75 Albert St. #203, Ottawa Ont. K1P 6G1; **Islands Protection Society,** Box 688 Queen Charlotte City, V0T 1S0 626-5077; **Canadian Parks and Wilderness Society,** #313, 69 Sherbourne St. Toronto, Ont., M5A 3X7.
Stein Action Committee, Box 195, Lytton, V0K 1Z0; **Lillooet Tribal Council,** Box 1420, Lillooet V0K 1V0; **Lytton Indian Band, Lytton V0K 1Z0; Save the Stein Coalition,** Box 338, Lytton V0K 1Z0
STIKINE: **Residents for a Free Flowing Stikine,** Telegraph Creek, V6J 2W0 235-3451; **Friends of the Stikine,** 1405 Duran Road, North Vanc. V7K 1N1.
The Naturalists Heritage Foundation 102 W. 40th Ave. Vanc. V5Y 2R2 321-3662

Pallisser Wildnerness Society, Box 94, Cranbrook V1C 4H6
Project North 4217 Granville Ave. R.R.#3 Victoria, V8Y 3V1 479-6865
Union of B.C. Indian Chiefs 440 W. Hastings St. V6B 1L1 684-0231
United Fishermen and Allied Workers Union 160-111 Victoria Dr. Vanc. 255-1336
Valhalla Wilderness Society Box 224 New Denver V0G 1S0 358-2449
West Coast Environmental Law Assn. 1001-207 W. Hastings St. V6B 1H7 684-7387
Western Canada Wilderness Committee #103-1520 W. 6th. Ave. Vanc. V6J 1R2 731-6716
Yellowhead Ecological Association P.O. Box #23 Clearwater V0Y 1N0

Alberta

Environmental Resource Centre, 10511 Saskatchewan Dr., Edmonton, AB, T6E 4S1

Yukon

Yukon Conservation Society, Box 4163, Whitehorse, YT. Laurie Henderson (403) 668-6407 (R); 668-5678 (B)

Provincial

The Hon. Bill Vander Zalm, **Premier** West Annex, Parliament Buildings Victoria, B.C. V8V 1X4 387-1715
The Hon. Bruce Strachan, **Minister of Environment and Parks,** Parliament Bldgs., Victoria, B.C. V8V 1X4 387-5202

Federal

Environment Canada Box 1540, 800 Burrard St. Vanc. V6Z 2G7 666-5900 Environmental Emergencies 666-6100 (office hours)..Emergency spills 666-6011.
Minister of Environment: Tom McMillan, House of Commons Ottawa, Ont. K1A 0A6 Postage Free

Resources:

Environment - Development, Special Issue, June, 1986
Canadian International Development Agency
Forests — Development, Autumn, 1986
Canadian International Development Agency
A Growing Concern: Soil Degradation in Canada
Science Council of Canada, September, 1986
Environment and Development: A Critical Stocktaking
North-South Institute, 1986

(Must see! (See biblio. inside for details): *Our Common Future*, Bruntland, 1987 *Abandon Affluence*, Trainer, F.E., 1985)

The Human Element: Issues of the Global Environment (and other materials): Teaching resource of the Common Heritage Program. Teachers' Press, 209 Pretoria Avenue, Ottawa K1S 1X1.
State of the World 1987. Lester Brown. New York. W. W. Norton.
Saving the Environment, A Practical Family Kit on Saving Resources, Saving Money, And... Environment Canada
The Bhopal Syndrome, Pesticide Manufacturing and the Third World
by David Weir, International Organization of Consumers Unions, 1986
World Military and Social Expenditures 1986 by Ruth Leger Sivard, World Priorities Inc

Teachergram

Teachergram is a twice-yearly publication of the BC Regional Education Committee of the Canadian Council for International Cooperation (CCIC) - a coordinating body for numerous non-governmental organizations working to promote awareness in Canada of world development issues. For further information, contact:

Teachergram
c/o VIDEA
407-620 View St.,
Victoria, B.C.
V8W 1J6

Produced by VIDEA for CCIC

Teachergram schedule

We apologize for irregular publication dates. In future, we hope to publish *Teachergram* once in the fall, and once in the spring of each year.